US Army Corps of Engineers®
Engineer Research and Development Center

National Erosion Control Development and Demonstration Program (Section 227)

Oil Piers, Ventura Co., California

Description

Oil Piers is located in northern Ventura County along Highway 101. The name Oil Piers is in reference to the recently removed Mobil Oil piers that were demolished between January and September 1998. The beach is backed by a rock revetment and highway embankment. Beach access is provided along an access road that runs parallel to the Pacific Ocean and via pedestrian underpasses under Highway 101. Historically, the offshore area has been an important surfing area. Project site lands are owned by the county of Ventura (landward of Highway 101) and California State Lands Commission (seaward of Highway 101) and are open and accessible to the public on equal terms.

Rock revetment and highway embankment by beach, Oil Piers, California

Issue

The goal of the demonstration project is not necessarily to advance the existing shoreline seaward of the adjacent shores, but to stabilize the shoreline and retain a placed beach-fill volume.

Technology

A design has been selected using sand-filled geotextile containers placed as an offshore reef. The reef will be placed at an angle to the shore so that waves will rotate slightly to approach the beach in a more shore-normal direction. By reducing the angle of waves reaching the beach, the longshore sediment transport will be reduced. The selected design will also provide recreational benefits and improved marine habitat. The reef will be oriented such that waves will break over the reef in a manner conducive to surfing, and the reef will quickly become covered with marine growth providing habitat for many types of marine life. Factors that were considered when looking for a design were as follows:

- The design should include an innovative design and initial placement of suitable beach-fill material. Sand sources may be natural and/or artificial.
- The design should preserve and/or enhance existing environmental resources and recreation and improve shore protection.
- The design should consider configuration alternatives for future modification.

- The design structure cannot totally block the transport of material in the littoral zone, and must allow sufficient sediment to pass through, over, or around the project to maintain the pre-project littoral supply to adjacent beaches.
- The design features can have no detrimental effects to downdrift beaches.
- The site is a highly used public recreational area, so any shore protection structures need to be no more intrusive than the former oil piers, and cannot interfere with the public's use of the beach or nearshore or otherwise introduce a safety hazard beyond that which previously existed with the former oil piers.
- The design must not have significant impacts to marine organisms, recreation, marine vegetation and hard bottom habitat.
- The design should include logistics for beach-fill placement, project monitoring, success criteria, as well as methodology and estimated cost for removal of the demonstration features if any detrimental effects are observed.

Status

Numerical model testing of the design has been completed and the final design has been selected based on the numerical modeling. An environmental assessment is being completed.

Points of Contact

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Program Authorization

Water Resources and Development Act of 1996 (Public Law 104-303, 110 Stat. 3658) dated October 12, 1996.

Additional information can be found at *http://chl.erdc.usace.army.mil/section227*.